

CLAIMS

1. A method of manufacturing a bismuth based oxide superconducting wire,
characterized by the steps of preparing a raw material powder and subjecting
5 the raw material powder to plastic working and heat treatment;
wherein the raw material powder contains superconducting phases comprising
Bi, Pb, Sr, Ca, Cu, and O in a composition ratio of approximately 2:2:1:2
(Bi+Pb):Sr:Ca:Cu and non-superconducting phases containing Pb;
wherein the composition ratio (Bi+Pb):Sr:Ca:Cu of the raw material powder is
10 approximately 2:2:2:3; and
wherein the ratio of the non-superconducting phases to the superconducting
phases is 5 wt% or less.
2. A method of manufacturing a bismuth based oxide superconducting wire,
15 characterized by the steps of preparing a raw material powder and subjecting
the raw material powder to plastic working and heat treatment;
wherein the raw material powder contains orthorhombic superconducting
phases comprising Bi, Pb, Sr, Ca, Cu, and O in a composition ratio of
approximately 2:2:1:2 (Bi+Pb):Sr:Ca:Cu; and
20 wherein the composition ratio (Bi+Pb):Sr:Ca:Cu of the raw material powder is
approximately 2:2:2:3.
3. A method of manufacturing a bismuth based oxide superconducting wire,

characterized by the steps of:

preparing a raw material powder,

subjecting the raw material powder to heat treatment at 600°C to 750°C and

at oxygen partial pressure of 0.02 atm or less; and

- 5 further performing plastic working and heat treatment on the raw material powder after the heat treatment;

wherein the raw material powder contains Bi, Pb, Sr, Ca, Cu, and O in a composition ratio of approximately 2:2:2:3 (Bi+Pb):Sr:Ca:Cu.

- 10 4. A bismuth based oxide superconducting wire obtained by the manufacturing method according to any one of claims 1 to 3.